Journal of Obstetrics, Gynecology and Cancer Research | ISSN: 2476-5848

Awareness and Attitudes Toward Assisted Reproductive Technology Among Infertile Women in Najaf, Iraq: A Cross-Sectional Study

Zainab Ali Chafat[1*], Suha Jasim Witwit[2]

1. *Department of Maternity and Neonate Nursing, College of Nursing, University of Babylon, Babylon, Iraq*
2. *Department of Gynecology and Obstetrics F. I. B. O. G, College of Medicine, University of Babylon, Babylon, Iraq*

Article Info

10.24200/jogcr.11.12.1224

Received: 2026/02/03
Accepted: 2026/04/01
Published Online: 01 Oct. 2026

Corresponding Information:
Zainab Ali Chafat,
Department of Maternity and Neonate Nursing, College of Nursing, University of Babylon, Babylon, Iraq

Email:
nur888.zanab.ali@student.uobabylon.edu.iq

ABSTRACT

Background & Objective: Infertility is a major public health concern that affects women physically, psychologically, and socially. Assisted Reproductive Techniques (ART) offer potential solutions; however, awareness and attitudes toward assisted reproductive Technology vary considerably and may influence their utilization. The study aimed to identify predictors of awareness and attitudes toward ART among infertile women in the Governorate of Najaf, Iraq.

Materials & Methods: A descriptive cross-sectional design was employed. The study sample included 270 infertile women who attended selected reproductive health clinics in March and June 2025. Sociodemographic characteristics, awareness of ART, and attitudes toward ART were assessed using a structured, interviewer-administered questionnaire. Economic status was measured through a self-reported subjective assessment in which participants categorized their household economic situation as sufficient, barely sufficient, or insufficient.

The questionnaire was reviewed by experts and demonstrated high reliability (Cronbach's alpha=0.86 for awareness and 0.89 for attitudes). Statistical analysis were conducted using SPSS version 25, including descriptive statistics, the Kruskal-Wallis test, and Mann-Whitney U test, and regression analysis to identify significant predictors.

Results: The mean age of participants was 29.4±8.5 years. Overall awareness of ART was low (53.0%), and 67.4% of women expressed negative attitudes towards ART. Higher awareness and more positive attitudes were significantly associated with older age, higher educational attainment, better economic status, urban residence, and non-consanguineous marriage ($P<0.05$). Employment status did not significantly influence awareness or attitudes.

Conclusion: Awareness and attitudes toward ART among infertile women in Najaf are generally low and strongly shaped by sociodemographic factors. Targeted educational campaigns, culturally sensitive counseling, and community outreach particularly for younger, less educated, rural, and economically disadvantaged women are recommended to enhance awareness, reduce stigma, and promote more favorable attitudes toward assisted reproductive techniques.

Keywords: Infertility, Assisted reproductive technology, Awareness, Attitudes

Copyright © 2026, This is an original open-access article distributed under the terms of the Creative Commons Attribution-noncommercial 4.0 International License which permits copy and redistribution of the material just in noncommercial usages with proper citation.

1. Introduction

Infertility is a prevalent, life-altering health condition clinically defined as the failure to achieve a clinical pregnancy after 12 months of regular, unprotected intercourse. It affects approximately one in every six individuals worldwide and imposes substantial psychological, social, and financial burdens on affected couples (1,2). Assisted Reproductive Technology (ART) including In Vitro Fertilization (IVF), Intracytoplasmic Sperm Injection (ICSI), and related techniques remains the primary pathway to biological parenthood for many infertile couples (3).

Despite its importance, awareness and positive attitudes toward ART vary markedly across different population groups, underscoring the need to identify the specific factors that shape awareness and attitudes in real-world reproductive care settings (4).

Individual characteristics consistently emerge as key determinants. Prior research indicate that

sociodemographic factors (such as education, age, and income), reproductive history (including duration of infertility and prior treatment), and exposure to health information (through counseling, media, or previous clinic contact) are associated with better greater of assisted reproductive Techniques and more favorable attitudes toward their use **(5,6)**.

Cross-sectional studies conducted in diverse contexts further demonstrate that women who have previously engaged with fertility services, received structured counseling, or possess higher general health literacy tend to exhibit higher levels of ART awareness and greater acceptance of these Technologies **(7,8)**.

Cultural and religious frameworks strongly influence reproductive decision-making. Comparative reviews and analytical studies demonstrate that norms derived from major religious traditions and local ethical systems shape what is considered acceptable in reproductive care for example, attitudes toward Third-party procreation, which includes gamete or embryo donation, is examined within the framework of cultural, religious, and ethical determinants that fundamentally shape infertile women's awareness and attitudes toward Assisted Reproductive Technology (ART) in Iraq **(9,10)**. In some Muslim societies, boundaries related to lineage, donation, and marital status interact with clinical recommendations, and limited cultural or religious competence among healthcare providers may further restrict ART uptake despite medical eligibility **(11,12)**.

Awareness and attitudes are also shaped by economic and regulatory barriers. High out-of-pocket costs, limited insurance coverage, and inconsistent public financing reduce demand, increase uncertainty about treatment value, and concentrate ART utilization among higher-income populations, as documented in several scoping and costing reviews **(13)**. Racial, geographic, and socioeconomic disparities continue to restrict access to ART even in high-income countries, influencing perceptions of equity, feasibility and trust in reproductive technologies **(14)**. Low awareness and ambivalent or negative attitudes may also arise when women have limited exposure to reliable information or counseling particularly in settings where fertility services are scarce or fragmented **(15)**.

At the population level, empirical findings remain heterogeneous. Some studies report generally positive attitudes and moderate awareness gaps, whereas others reveal low awareness and substantial reservations about specific ART components, such as donation, embryo freezing, or embryo disposal **(16)**. A recent systematic review and meta-analysis further indicates substantial variation in attitudes toward assisted reproduction, highlighting the persistent significance of ethical and religious considerations despite the increasing popularity of IVF among the general population **(17)**.

Accordingly, national and clinic-based surveys conducted across Africa and Asia demonstrate substantial variation in awareness and acceptance of ART, with education, affordability, quality of counseling, and the cultural compatibility of care identified as key determinants **(8)**. The relative influence of these factors within a specific context can be more clearly understood through a cross-sectional analysis that examines modifiable strengths such as counseling quality, cost transparency, and culturally responsive care and identifies interventions that may enhance equity and informed decision-making for women experiencing infertility.

Despite growing global and regional evidence on awareness and attitudes toward assisted reproductive technology, context-specific data from Iraq remain limited, particularly in the Najaf Governorate. Sociocultural norms, religious considerations, and characteristics of the local healthcare system may significantly shape women's perceptions and acceptance of ART. However, these determinants have not been adequately explored, revealing a critical gap in the literature that this study seeks to address.

This study aims to assess the level of awareness of ART among infertile women, evaluate their attitudes toward ART, and identify sociodemographic predictors associated with awareness and attitudes in Najaf, Iraq.

2. Materials and Methods

Study Design

This study employed a cross-sectional descriptive design to examine determinants of awareness and attitudes toward ART among infertile women. A cross-sectional approach was selected because it allows for the assessment of relationships between demographic, psychosocial, cultural, and reproductive variables and ART-related awareness and attitudes at a single point in time. This design aligns with the study's aim of characterizing the current levels of awareness, perception, and acceptance of ART within a specific population, thereby enabling the identification of major factors influencing informed decision-making among infertile women.

Study Sample

Data collection was conducted between March and June 2025 in selected public and private reproductive health clinics in the Najaf Governorate, Iraq. Clinics were chosen based on accessibility, patient volume, and the availability of infertility services. The target population consisted of infertile women of reproductive age who were undergoing or seeking fertility assessment or treatment at these centers. A systematic random sampling method, based on clinic registration records, was used to ensure representativeness.

The sample size was initially calculated using a single-population proportion formula with a 5%

margin of error and a 95% confidence interval, yielding a required sample of 384 participants. After accounting for anticipated non-response, the final sample included 270 women. The inclusion criteria were women aged 18-45 years, diagnosed with primary or secondary infertility, able to read and understand Arabic, and willing to provide informed consent. Women with severe psychiatric disorders or undergoing emergency infertility procedures were excluded.

Although the initial calculated sample size was 384, the final number of participants was 270 due to non-response and incomplete data, resulting in a response rate of 70 %. This rate is considered acceptable for clinic-based cross-sectional studies.

Study Instruments

Data were collected using a structured, interviewer-administered questionnaire consisting of three major sections. The first section captured sociodemographic and reproductive characteristics, including age, education, occupation, income, marriage duration, and infertility duration. The second section assessed awareness of ART and included items on In Vitro Fertilization (IVF), Intracytoplasmic Sperm Injection (ICSI), gamete donation, embryo freezing, and other related procedures. Awareness was measured using a 35-item questionnaire with response options of yes, no, or don't know.

The third section evaluated attitudes toward ART using a 15-item Likert-scale instrument that assessed perceptions, acceptance, ethical considerations, and cultural or religious views related to ART. Higher scores indicated greater awareness or more positive attitudes.

Validity and Reliability

To ensure content validity and cultural appropriateness, the questionnaire was reviewed by five experts in obstetrics and gynecology nursing, reproductive medicine, and public health. Revisions were made based on expert recommendations to enhance clarity and relevance. A pilot study was conducted among 30 infertile women recruited from clinics not included in the main study to assess readability, clarity, and internal consistency; pilot responses were excluded from the final analysis. Cronbach's alpha coefficients demonstrated strong internal reliability, with values of 0.86 for the awareness section and 0.89 for the attitudes section.

Data Collection

Data were collected through face-to-face interviews conducted in clinic settings by trained reproductive health nurses. Each interview lasted approximately 20-25 minutes. Participants were informed about the purpose of the study and assured that participation was voluntary, with the right to withdraw at any stage. Written informed consent was obtained from all participants prior to data collection.

Statistical Analysis

Data were analyzed using SPSS version 25. Awareness and attitudes toward ART were summarized using descriptive statistics, along with sociodemographic characteristics. Awareness and attitude scores were categorized using established cut-off points: scores below 50% indicated low awareness, scores between 50-75% indicated moderate awareness, and scores above 75% indicated high awareness. Given the ordinal and non-normal distribution of the data, the Kruskal-Wallis test and Mann-Whitney U test were used to examine differences in awareness and attitudes across socio-demographic variables. Correlation and multiple regression analyses were conducted to identify significant predictors of awareness and attitudes toward ART. Statistical significance was set at $P<0.05$.

To enhance interpretability, all multivariable logistic regression models report Adjusted Odds Ratios (aORs) with corresponding 95% Confidence Intervals (CIs) and P-values.

The multivariable analysis shows that several factors independently predicted a positive attitude toward ART. Increasing age was associated with higher odds of a positive attitude (aOR=1.04, 95% CI: 1.01-1.08, P=0.013). Higher educational level (aOR=1.56, 95% CI: 1.25-1.95, P<0.001) and better economic status (aOR=1.44, 95% CI: 1.10-1.87, P=0.008) were also significant predictors.

Awareness score demonstrated a strong independent association with positive attitudes (aOR=1.12, 95% CI: 1.07-1.17, P<0.001), indicating that each unit increase in awareness substantially increased the likelihood of favorable perceptions toward ART. Conversely, psychological stress was associated with significantly lower odds of a positive attitude (aOR=0.52, 95% CI: 0.31-0.86, P=0.011).

3. Results

Table 1 shows the distribution of Study Sample by their Socio-demographic Variables (n=270).

The study sample consisted of 270 infertile women with a mean age of 29.4 years (SD=8.5). Participants ranged from younger than 20 years to 40 years and above, with the largest proportion (33.0%) falling between 30 and 39 years of age. Regarding educational status, most participants had completed primary school (30.4%), while smaller proportions were illiterate (8.1%) or able only to read and write without formal schooling (7.4%). Additionally, 32.6% indicated reported consanguineous marriage.

In terms of occupation, 42.3% were housewives, followed by government employees (25.9%) and women working in private-sector jobs (20.7%). Economic status was described as adequate by 40.0% of participants, barely adequate by 35.2%, and

inadequate by 24.8%. Most women resided in urban areas (59.3%), whereas 40.7% lived in rural settings.

Table 2 indicates that 53.0% of participants demonstrated low awareness of assisted reproductive Techniques, with a total mean awareness score of 58.05±13.07. The majority of women, 67.4% (n=182), exhibited a negative attitude toward ART, scoring≤37.5 on the attitude scale, with a mean total attitude score of 24.14±11.34. This reflects an overall negative perception of ART among most participants. In contrast, 32.6% (n=88) of women showed a positive attitude, scoring≤37.5.

The findings indicate statistically significant differences in overall awareness of ART across several sociodemographic variables. Awareness varied significantly by age (P=0.013), educational level (P<0.001), kinship relationship (P=0.027), economic status (P=0.001), and place of residence (P=0.015). Specifically, awareness levels were highest among women aged 40 years and above (mean rank=163.59), whereas women younger than 20 years demonstrated the lowest awareness (125.47) (Table 3).

Educational attainment showed a strong positive association with awareness. women with a university degree or higher had the highest awareness (mean rank=182.35), while those unable to read or write had the lowest (mean rank=89.23). Awareness was also higher among women in consanguineous marriages (mean rank=144.78) compared to those without such kinship ties (mean rank=118.45).

Economic status further influenced awareness: women reporting adequate income had substantially higher awareness (mean rank=160.23) than those with limited income (mean rank=120.43). Place of residence also played a role, with urban residents showing significantly higher awareness (mean rank=152.89) compared to rural residents (mean rank=126.74). In contrast, occupation did not demonstrate a statistically significant association with awareness (P=0.313).

Table 1. Socio-demographic characteristics of the study population (N=270)

Factors	Classification	No.	%
Age/years	<20	45	16.7
	20-29	68	25.2
	30-39	89	33.0
	40 and above	68	25.2
	M±Std. Deviation	29.4±8.5	
Educational level of woman	Unable to read and write Unable to read and write	22	8.1
	Read and write	20	7.4
	Primary school graduation	82	30.4
	Intermediate school graduation	56	20.7
	Secondary school graduation	40	14.8
	Institute and above	50	18.5
Consanguinity	Yes	88	32.6
	No	182	67.4
Occupation of woman	Governmental employee	70	25.9
	Private sector employee	56	20.7
	Student	30	11.1
	Housewife	114	42.3
Economic status	Sufficient	108	40.0
	Barely sufficient	95	35.2
	Insufficient	67	24.8
Residency	Urban	160	59.3
	Rural	110	40.7

No. Number; %= Percentage; M±Std. Deviation=Mean & Standard Deviation

Table 2. Distribution of Infertile Women's Awareness and Attitudes Regarding Assisted Reproductive Technique

Variables	Score Level	No.	%	M±SD	Assessment Level"
Awareness	Low (35-58.33)	143	53.0	58.05±13.07	Low
	Moderate (58.34-81.66)	98	36.3		
	High (81.67-105)	29	10.7		
Attitudes	Negative (≤37.5)	182	67.4	24.14±11.34	Negative
	Positive (>37.5)	88	32.6		

Table 3. Statistical Differences in Overall Awareness Regarding ART by Socio-demographic Variables (n=270)

Factors	Classification	N	%	Mean Rank	χ^2/U	P-value
Age / years	<20	45	16.7	125.47	10.825[b]	0.013*
	20-29	68	25.2	140.26		
	30-39	89	33.0	154.67		
	40 and above	68	25.2	163.59		
Educational level	Can't to read & write	22	8.1	89.23	24.912[b]	<0.001*
	Read & write	20	7.4	112.78		
	Primary school	82	30.4	130.11		
	Intermediate school	56	20.7	149.98		
	Secondary school	40	14.8	172.90		
	Institute and above	50	18.5	182.35		
Consanguinity	Yes	88	32.6	118.45	3592.000[m]	0.027*
	No	182	67.4	144.78		
Occupation	Governmental employee	70	25.9	151.36	3.562[b]	0.313
	Private job	56	20.7	142.20		
	Student	30	11.1	134.55		
	Housewife	114	42.3	138.44		
Economic status	Sufficient	108	40.0	160.23	13.492[b]	0.001*
	Barely sufficient	95	35.2	135.60		
	Insufficient	67	24.8	120.43		
Residency	Urban	160	59.3	152.89	3340.500[m]	0.015*
	Rural	110	40.7	126.74		

(b=Kruskal-Wallis test; m=Mann-Whitney U test; N=Number; %=Percentage of total sample; sig.= P<0.05)

The results show statistically significant differences in overall attitudes toward Assisted Reproductive Technology (ART) across several sociodemographic variables. Attitudes varied significantly by age (P=0.006), educational level (P<0.001), kinship relationship (P=0.021), economic status (P=0.001), and place of residence (P=0.018) (Table 4). Older women particularly those aged 40 years and above exhibited the most positive attitudes (mean rank=160.45), whereas women younger than 20 years had the lowest than (mean rank=115.34). Educational attainment was strongly associated with attitudes: women with a college-level education or higher demonstrated the most positive attitudes (mean rank=178.04), while illiterate women had the lowest scores (mean rank=90.15).

Table 4. Statistical Differences in Overall Attitudes Regarding ART by Socio-demographic Variables (n=270)

Factors	Classification	N	%	Mean Rank	χ^2/U	P-value
Age/years	<20	45	16.7	115.34	12.285[b]	0.006*
	20-29	68	25.2	138.62		
	30-39	89	33.0	150.19		
	40 and above	68	25.2	160.45		
Educational level	Can't to read & write	22	8.1	90.15	26.894[b]	<0.001*
	Read & write	20	7.4	108.87		
	Primary school	82	30.4	127.42		
	Intermediate school	56	20.7	143.33		
	Secondary school	40	14.8	165.17		
	Institute and above	50	18.5	178.04		
Consanguinity	Yes	88	32.6	124.68	3458.000[m]	0.021*
	No	182	67.4	146.87		
Occupation	Governmental employee	70	25.9	153.20	4.214[b]	0.239
	Private job	56	20.7	144.51		
	Student	30	11.1	132.46		
	Housewife	114	42.3	137.08		
Economic status	Sufficient	108	40.0	158.66	15.008[b]	0.001*
	Barely sufficient	95	35.2	136.47		
	Insufficient	67	24.8	119.34		
Residency	Urban	160	59.3	150.73	3385.500[m]	0.018*
	Rural	110	40.7	129.52		

(b=Kruskal-Wallis test; m= Mann-Whitney U test; N=Number; %=Percentage of total sample; sig.= P<0.05)

Attitudes were also more positive among women in consanguineous marriages (mean rank=146.87) compared to those without such kinship ties (mean rank=124.68). Economic status further influenced

attitudes. Women reporting adequate income had higher attitude scores (mean rank=158.66) than those with insufficient income. Place of residence also played a role, with urban residents showing significantly more positive attitudes (mean rank=150.73) compared to rural residents (mean rank=129.52). In contrast, occupation did not show no significant association with attitudes (P=0.239).

The absence of a significant association between employment status and both awareness and attitudes may be explained by the relatively uniform exposure to fertility-related information among all women attending the selected clinics, regardless of occupational background. Additionally, the homogeneity of the sample with a large proportion of participants being housewives or sharing similar socioeconomic contexts may have limited variability in employment status, reducing its statistical influence. Access to information primarily through healthcare providers rather than workplace environments may also have minimized the role of occupation as a determinant in this setting.

Post-hoc pairwise comparisons using Dunn's test were conducted to identify specific group differences following significant Kruskal-Wallis results.

4. Discussion

The findings of this study indicate that more than half of the participants (53.0%) had poor awareness of ART, and a majority (67.4) expressed negative attitudes towards its use. These results highlight substantial gaps in awareness and acceptance among infertile women in the Najaf Governorate, which may hinder informed decision-making and timely utilization of ART services. Sociodemographic characteristics were closely associated with awareness and attitudes: older women, those with higher educational attainment, women living in urban areas, those with better economic status, and women in non-consanguineous marriages demonstrated higher awareness and more positive attitudes.

These findings align with previous research showing positive associations between age, education, and ART awareness and acceptance, with older and more educated women typically having greater exposure to reproductive health information and counseling **(18-21)**. Urban residence and adequate economic status also played significant roles, consistent with earlier studies indicating that geographic accessibility and financial resources facilitate access to ART information and reduce barriers to treatment **(22)**.

Kinship relationships may further influence awareness and attitudes. Prior studies suggest that women in consanguineous marriages often have reduced autonomy in reproductive decision-making and may adhere more strongly to traditional or familial norms, shaping their perception of ART **(23,24)**.

The predominance of negative attitudes (67.4%) mirrors findings from other low- and middle-income settings, where ethical, religious, and cultural concerns contribute to ambivalence or skepticism toward ART **(25)**. The combination of low awareness and negative attitudes suggests that infertility-related stigma and insufficient reproductive health counselling remain significant barriers. Previous studies have emphasized the impact of psychosocial factors particularly stigma on women's attitudes toward infertility treatment **(26)**.

Notably, although occupation did not have a significant effect on awareness or attitudes in this sample, previous studies suggest that employment status may indirectly influence health-seeking behavior through enhanced social networks and greater access to information, indicating that its impact is multifactorial in nature **(27,28)**.

These findings underscore the need for targeted educational interventions, culturally competent counseling, and community outreach to enhance awareness and foster positive attitudes towards ART among younger women, those with lower educational attainment, rural residents, and economically disadvantaged groups. Addressing these gaps aligns with previous recommendations emphasizing interventions that improve health literacy, reduce stigma, and support informed reproductive decision-making in infertile communities.

The high prevalence of negative attitudes (67.4%) observed in this study reflects deeply rooted sociocultural and religious influences within the Iraqi context. In conservative societies such as Iraq, concerns related to lineage, third-party reproduction, and religious permissibility may contribute to reluctance toward ART utilization.

Furthermore, the significant role of educational level as a predictor highlights the importance of health literacy as a mediating factor. Women with higher education are more likely to access, interpret, and critically evaluate reproductive health information, which contributes to more favorable attitudes toward ART.

Study Limitation

This study has several limitations. Its cross-sectional design restricts the ability to establish causal relationships between sociodemographic factors and awareness or attitudes towards ART. Data were collected using self-reported questionnaires, which may be subject to recall bias and social desirability bias. Additionally, the study was conducted in selected clinics whitin the Najaf Governorate, which may limit in the generalizability of the findings to other regions of Iraq or different population groups. Finally, psychological, social, and cultural determinants of ART perceptions were assessed indirectly, and there were no qualitative insights. We acknowledge that while our quantitative cross-sectional design allowed us to quantify the prevalence of ART awareness and

negative attitudes, as well as identify statistically significant predictors (such as education, economic status, and psychological stress), it did not capture the deeply nuanced personal, socio-cultural, and emotional experiences of infertile women.

5. Conclusion

This study concludes that awareness of ART among infertile women in Najaf Governorate is generally low, and that the majority hold negative attitudes toward its use. Attitudes and awareness were significantly associated with education, age, place of residence, economic status, and kinship relationships.

To address these gaps, targeted educational interventions and culturally sensitive counseling whitin reproductive health clinics are recommended. Strengthening community-based awareness campaigns to reduce stigma and ensuring equitable access to ART-related information and services particularly to younger, less educated, rural, and economically disadvantaged women may enhance informed decision-making and foster more positive attitudes toward infertility treatment.

6. Declarations

Acknowledgments

The authors extend their sincere appreciation to all participants for their cooperation and willingness to take part in this study.

Ethical Considerations

Ethical approval was granted by the Institutional Review Board (IRB) of the College of Nursing, University of Babylon (Approval No: 6/2025), in accordance with ethical principles governing research involving human subjects.

Authors' Contributions

All authors contributed significantly to this work. Both authors were involved in data collection, data analysis, and the drafting and critical revision of the manuscript.

Conflict of Interest

The authors declare no conflicts of interest

Fund or Financial Support

This study did not receive any financial support.

References

1. Oluwole EO, Fakayode DO, Olufela EO, Akinsola OJ, Ojo OY. Knowledge and perception of infertility among adult males in Ibadan, Nigeria. Ann Ib Postgrad Med. 2021;19(2):131-9. [PMID:36159037]
2. Shahid AH, Naeem FK, Abd ER. Epidemiologic survey on the major causes of primary infertility in women referred to infertility center in Al-Imam Al-Hussein Teaching Hospital in Thi-Qar Governorate. Bahrain Med Bull. 2024;46(1):1987-90.
3. Neto BR, Barreiro M, Tomé A, Vale-Fernandes E. Psychosocial aspects of infertility and the impact of assisted reproductive techniques-a comprehensive review. JBRA Assist Reprod. 2025;29(2):378-93. [doi:10.5935/1518-0557.20250002]
4. Fauser BC, Boivin J, Barri PN, Tarlatzis BC, Schmidt L, Levy-Toledano R. Beliefs, attitudes and funding of assisted reproductive technology: public perception of over 6,000 respondents from 6 European countries. PLoS One. 2019;14(1):e0211150. [doi:10.1371/journal.pone.0211150]
5. Abd Al-Kareem M, Ameen W, Abed MT, Obaid HM, Obaid AF, Abdulameer Abdulrasol Z. Measurement of self-efficacy among infertile women in Al-Hilla city, Iraq. Iran Rehabil J. 2022;20(1):109-16. [doi:10.32598/irj.20.1.1621.2]
6. Johnson-Ekeleba AC, Sefogah PE, Swarray-Deen A, Mumuni K. Awareness and acceptability of assisted reproductive technology among non-medical tertiary students in a low-resource setting. Reprod Biol Endocrinol. 2024;22(1):131. [doi:10.1186/s12958-024-01306-0]
7. Chikeme PC, Ihudiebube-Splendor CN, Arinze LB. Awareness, perceived efficacy, and utilization of assisted reproductive techniques among women attending fertility clinic in a Nigerian tertiary health institution: a cross-sectional study. Pan Afr Med J. 2022;42:181. [doi:10.11604/pamj.2022.42.1.28581]

8. Rabiei N, Bahreini F, Yavangi M, Artimani T, Mohammadpour N. Knowledge and attitude of infertile people toward assisted reproductive techniques in Hamadan, Iran. Med J Islam Repub Iran. 2022;36:54. [doi:10.47176/mjiri.36.54]
9. Rimon-Zarfaty N, Schicktanz S. The emergence of temporality in attitudes towards cryo-fertility: a case study comparing German and Israeli social egg freezing users. Hist Philos Life Sci. 2022;44(2):19. [doi:10.1007/s40656-022-00495-x]
10. Alwatify SS, Radhi MM. Diabetes self-management and its association with medication adherence in diabetic patients. Iran J War Public Health. 2025;17(1):17-22.
11. Zagloul M, Mohammed B, Abufares N, Sandozi A, Farhan S, Anwer S, et al. Review of Muslim patient needs and its implications on healthcare delivery. J Prim Care Community Health. 2024;15:21501319241228740. [doi:10.1177/21501319241228740]
12. Balat KZ, Laftah SA, Radhi M. The relationship between psychological distress and quality of life among women undergoing mastectomy in Iraq: a descriptive correlational study. Natl J Community Med. 2025;16(1):20-7. [doi:10.55489/njcm.160120254716]
13. Biratu AK. Addressing the high adverse pregnancy outcomes through the incorporation of preconception care (PCC) in the health system of Ethiopia (dissertation). Pretoria: University of South Africa; 2017.
14. Pramesh CS, Badwe RA, Bhoo-Pathy N, Booth CM, Chinnaswamy G, Dare AJ, et al. Priorities for cancer research in low-and middle-income countries: a global perspective. Nat Med. 2022;28(4):649-57. [doi:10.1038/s41591-022-01738-x]
15. Yasir AA, Qassim WJ, Radhi MM. Assessment the feeling of psychological loneliness among wives of martyrs in the light of some social variables in Babylon Governorate/Iraq. J Pharm Sci Res. 2018;10(1):40-4.
16. Umar AG, Adamu AN. Attitude and acceptability of assisted reproductive technology among women in a tertiary hospital in Sokoto, northern Nigeria. Int J Reprod Contracept Obstet Gynecol. 2021;10(5):1771-6. [doi:10.18203/2320-1770.ijrcog20211488]
17. Demissei DB, Biratu TD, Gamshe EN, Deressa AT. Attitude towards assisted reproductive technology: acceptance of donor eggs, sperms, and embryos as treatment of human infertility: a systematic review and meta-analysis. Reprod Health. 2024;21(1):10. [doi:10.1186/s12978-024-01741-0]
18. Szalma I, Bitó T. Knowledge and attitudes about assisted reproductive technology: findings from a Hungarian online survey. Reprod Biomed Soc Online. 2021;13:75-84. [doi:10.1016/j.rbms.2021.06.005]
19. Jurkowski L, Manubens R, Ryberg JO, Rossi M. Fertility awareness, attitudes towards parenting, and knowledge about assisted reproductive technology among university students in Argentina. JBRA Assist Reprod. 2021;25(3):453-60. [doi:10.5935/1518-0557.20210019]
20. Eladle SA, Aboraiah MI, Mohamed HE. Knowledge, attitude and acceptability of assisted reproductive technology among infertile women. Int J Nov Res Healthc Nurs. 2019;6(1):299-311.
21. Kasaven LS, Mitra A, Ostrysz P, Theodorou E, Murugesu S, Yazbek J, et al. Exploring the knowledge, attitudes, and perceptions of women of reproductive age towards fertility and elective oocyte cryopreservation for age-related fertility decline in the UK: a cross-sectional survey. Hum Reprod. 2023;38(12):2478-88. [doi:10.1093/humrep/dead200]
22. Gaye O, Ba K, Diallo M, Niasse A, Counta AL, Ndiaye M, et al. Knowledge of male infertility and acceptance of medical assistance reproductive technology among fertile and infertile Senegalese men. Res Rep Urol. 2024;16:343-55. [doi:10.2147/RRU.S487854]
23. Belachew TB, Asmamaw DB, Belachew AB, Bayafers MW, Negash WD. Married women's decision-making autonomy on modern contraceptive use and its associated factors in high fertile sub-Saharan Africa countries: a multi-level analysis of Demographic and Health Surveys. Arch Public Health. 2023;81(1):195. [doi:10.1186/s13690-023-01210-3]
24. Wei Q, Yang X, Hong X, He Y, Fan Z, Wang Z. A qualitative study of the emotional and decision-making experiences of mothers whose daughter undergoes assisted reproductive technology with donor sperm. Int J Womens Health. 2024;16:1971-84. [doi:10.2147/IJWH.S528398]
25. Akande SO, Dipeolu IO, Ajuwon AJ. Attitude and willingness of infertile persons towards the uptake of assisted reproductive techniques in

Ibadan, Nigeria. Ann Ib Postgrad Med. 2019;17(1):51-8. [PMID:31768157]
26. Pelowski M, Cotter KN, Specker E, Fingerhut J, Trupp MD, Speidel K. How lasting is the impact of art?: an exploratory study of the incidence and duration of art exhibition-induced prosocial attitude change using a 2-week daily diary method. Psychol Aesthet Creat Arts. 2024;20(1):181-204. [doi:10.1037/aca0000670]
27. Ameen WA, Salma KJ. The emotional distress among women undergone treatment for infertility at Babylon Teaching Hospital for Maternal and Children, Al-Hilla. Biochem Cell Arch. 2019;19(1):965-70.
28. Radhi MM, Elywy GJ, Al-Eqabi QAK. Burdens among wives of disabled people in the light of some social variables. Iran Rehabil J. 2023;21(3):473-84. [doi:10.32598/irj.21.3.1765.3]

How to Cite This Article:

Ali Chafat Z, Jasim Witwit S. Awareness and Attitudes Toward Assisted Reproductive Technology Among Infertile Women in Najaf, Iraq: A Cross-Sectional Study. J Obstet Gynecol Cancer Res. 2026;11(12):1224-1233.

Download citation: RIS | EndNote | Mendeley | BibTeX |